AIR TRANSPORT ASSOCIATION

September 29, 2004

Docket Management Facility
U.S. Department of Transportation
400 Seventh Street, SW
Nassif Building, Room PL-401
Washington, DC 20590-0001

Re: **Fuel Tank Safety Compliance Extension and Aging Airplane Program Update**
Final Rule; Request for Comments
Docket No. FAA-2004-17681
69 Fed. Reg. 45935 (July 30, 2004)

Dear Sir or Madam:

The Air Transport Association of America, Inc. ("ATA") submits these comments in response to FAA's informational notice describing potential rulemaking from its reassessment of many aspects of the Aging Airplane Program ("Program"). The FAA published the notice and request for comments in an amendment to Special Federal Aviation Regulation ("SFAR" 88") that extended the compliance period of this component of the Fuel Tank System Safety Rule issued on April 19, 2001 (66 Fed. Reg. 23086, May 7, 2001).[1]

ATA and its member airlines welcome and support the FAA's comprehensive review of this Program. The systematic coordination of Program components will improve the overall efficiency and efficacy of the pending individual rulemaking initiatives relating to aging structures, aging wiring, widespread fatigue damage, and corrosion. We also support FAA's consideration of amendments to Part 25 of the Federal Aviation Regulations to impose requirements for design approval holders, when appropriate, to facilitate operator compliance with Program rules and with similar rules that FAA may adopt in the future.

It is clear that ATA's members are uniquely impacted by Program requirements, particularly the compliance timelines. ATA is the principal trade and service organization of the U.S. scheduled airline industry, and our members[2] account for 95 percent of the passenger and cargo traffic carried annually by U.S. scheduled airlines. ATA's members, currently operating a fleet of 4,474 aircraft, possess in-depth practical knowledge of, and experience with, the operation and maintenance of large commercial

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[1] Under SFAR 88, operators of certain transport category airplanes must incorporate into their maintenance programs upgraded instructions for maintaining and inspecting fuel tank systems, and that action is now viewed as one of the first adopted components of the Aging Airplane Program. Pursuant to the FAA's request for comments, on August 30, 2004, ATA submitted comments regarding the extension.

[2] ATA is the principal trade and service organization of the U.S. scheduled airline industry. Members are: ABX Air, Alaska Airlines, Aloha Airlines, America West Airlines, American Airlines, ASTAR Air Cargo, ATA Airlines, Atlas Air, Continental Airlines, Delta Air Lines, Menlo Worldwide Forwarding, Evergreen International Airlines, FedEx Corp., Hawaiian Airlines, JetBlue Airways, Midwest Airlines, Northwest Airlines, Polar Air Cargo, Southwest Airlines, United Airlines, UPS Airlines, and US Airways.
Associate members are: Aerovías de México, Air Canada, Air Jamaica, and Mexicana de Aviación.

transports. For many years ATA and its members have participated in the development of the Program through membership in the Aging Transport Systems Rulemaking Advisory Committee ("ATSRAC"), the Aviation Rulemaking Advisory Committee ("ARAC") Airworthiness Assurance Working Group ("AAWG"), and Fuel Tank Inerting Harmonization Working Group ("FTIHWG"). In addition, we lead industry efforts to develop guidance for producing the maintenance and inspection instructions needed to comply with SFAR 88. For these reasons, ATA and its members have a unique interest in FAA's plans for aging aircraft rulemakings.

I. Executive Overview

ATA and its member airlines fully support FAA's initiative in conducting a comprehensive review of the Aging Airplane Program and related programs. A reevaluation of the practicality and cumulative impact of program rules and initiatives will permit FAA to properly oversee Program compliance. It will also permit operators to comply with the requirements efficiently and effectively. This coordinated effort will be enhanced by FAA's intent to require, when appropriate, design approval holders to support operators according to a specific compliance schedule. ATA supports FAA's integration of the compliance requirements and encourages similar reviews in the future if a similar convergence of rulemakings arises (or if priorities must be established due to overlapping proposals). We look forward to the opportunity to comment on the rulemaking proposals for the various components of the Program, and would welcome the opportunity to participate in any further review of the Program or similar reviews in the future.

Taken individually, each component of the Program could have a substantial impact on commercial transport operations. The components of the Program include: (1) SFAR 88; (2) an Enhanced Airworthiness Program for Airplane Systems ("EAPAS") draft proposed rule; (3) the Aging Airplane Safety Interim Final Rule ("AASIFR"); (4) a Widespread Fatigue Damage ("WFD") draft proposed rule; and (5) the Corrosion Prevention and Control Program ("CPCP") proposed rule. Adopting these initiatives on a case-by-case basis could significantly disrupt the scheduled service of the commercial transport industry with uncoordinated maintenance, inspection, and modification schedules; overlapping or redundant maintenance and inspection requirements; and unnecessary concerns resulting from repetitively and needlessly disturbing sensitive systems and components. In particular, ATA supports comprehensive program planning and a methodology that aligns multiple program requirements with maintenance schedules. Rather than isolated rulemaking efforts with uncoordinated compliance schedules, this coordination will ensure that the industry can achieve the objectives of the Program and achieve the stated safety goals.

ATA and its member airlines concur with the general direction FAA has outlined in each component of the Program. While we understand that FAA will issue separate rulemakings on each component, we offer these preliminary comments to highlight specific concerns with certain elements of some of the plans. Of particular note, ATA strongly supports FAA's consideration of amendments to Federal Aviation Regulations (FAR) Part 25 as described in the section of the informational notice entitled a "New Approach for Design Approval Holders." When appropriate, FAA should require design approval holders to support operator compliance with an operating rule, including parts support. We, however, urge FAA to consult with the industry as this initiative develops to ensure that the impact of potential regulations on both operators and design approval holders are explored fully in order to avoid unintended consequences.

II. Summary of ATA Comments. A summary of ATA comments and recommendations for each component of the Aging Airplane Program is provided below. Detailed comments are provided in Exhibit 1:

1. The Fuel Tank System Safety Rule.

ATA concurs with FAA's general direction on revisions to the Fuel Tank System Safety Rule. As noted, ATA has submitted comments strongly supporting the extension of the compliance period of the operating rules of SFAR 88 that we consider necessary for compliance, and to achieve the Rule's goals. Since the operating rules have remarkable similarity to the general strategy, program and compliance planning considerations, maintenance scheduling, and certain technical requirements of the EAPAS, we concur with FAA's intention to clarify certain elements of the operating rules of SFAR 88 and coordinate them in a proposed EAPAS rule. ATA's preliminary recommendations are:

- FAA should adopt ATA's comments to proposed Policy Statement PS-ANM100-2004-10029 (attached as Exhibit. 2). Those comments highlight the need to develop an advisory circular that would supersede the policy statement, develop a supplementary advisory circular that focuses on guidance for carriers, and carefully address "critical design features" in the development of data and documents.

- FAA should provide realistic compliance periods between the actions required of type certificate holders and supplemental type certificate (STC) holders, and between the actions required of STC holders and operators. In the Fuel Tank System Safety Rule, each action is dependent on the preceding action. Special attention should be given to constructing the SFAR 88 and EAPAS programs to work in unison toward common or similar program milestones.

- FAA should define its expectations for design approval holders for data and documents as deliverables due to FAA for approval within the compliance period; these deliverables should be in a form ready for direct incorporation into operator maintenance programs to the greatest extent possible. As discussed later in these comments with respect to FAA's "new approach", this compliance period should terminate well before the compliance period of the operating rule, providing sufficient time for FAA to approve the deliverables and for operators to implement them.

- FAA should publish guidance material for carriers before, or concurrently with, publication of the proposed and final rules, respectively.

2. The Enhanced Airworthiness Program for Airplane Systems.

ATA supports FAA's direction with revisions to the proposed EAPAS rule insofar as the revisions adhere to the direction set in the ATSRAC effort. As discussed above, ATA concurs with FAA's intention to consolidate the requirements of the EAPAS and the Fuel System Safety Rule, primarily to gain efficiencies and to avoid redundant or overlapping requirements. The second, third, and fourth recommendations above for the Fuel System Safety Rule apply equally to the EAPAS.

3. The Aging Airplane Safety Interim Final Rule.

ATA supports FAA's direction with revisions to the AASIFR as they appear to address several difficult issues discussed in ATA's comments to this interim rule submitted on May 5, 2003.[3] ATA is pleased that FAA has tasked the ARAC AAWG to establish guidelines for the development of damage tolerance programs in order to support compliance with certain operating rules of the AASIFR, and ATA and its member airlines look forward to participating in the AAWG efforts. ATA strongly concurs with FAA's plan to extend the compliance period of the operating rule by three years. As noted in our initial comments, the extension would be consistent with our estimate of the time required to develop the prerequisite guidance material and necessary to accommodate this challenging development program.

Since the AASIFR was adopted, operators and FAA have gained substantial experience with the inspections and record reviews that the rule currently requires. ATA recommends that FAA support the formation of an industry council to review the results of the inspections performed to date to develop a basis by which the requirements of the 1991 Aging Airplane Safety Act to inspect each airplane and the repetitive interval of those inspections may be modified. The current requirements are not necessary to achieve safety objectives and impose significant burdens on the industry and FAA.

4. The Widespread Fatigue Damage Program.

ATA supports FAA's direction with revisions to the proposed WFD rule insofar as they adhere to the direction set in the AAWG effort. Specific compliance actions and periods, coordination of those actions and periods with other aging airplane initiatives, and the potential impact of the rule on aging airplanes in-service warrant close evaluation by a broader spectrum of potentially-affected operators. ATA recommends that, before publishing a proposed rule, FAA provide greater visibility into the specifics of the WFD program, particularly requirements relating to the actions that would be required in airplanes beyond their service life and the potential impacts of those actions. Further, due to the complexity of the requirements, we recommend a substantial comment period on any proposals.

5. The Corrosion Prevention and Control Program (CPCP).

As part of its comprehensive review of the Program, FAA reevaluated a proposed rule that would, if adopted, require certain commercial operators to incorporate corrosion prevention and control programs into their maintenance or inspection programs. Following this review, FAA withdrew the proposal. ATA concurs with this withdrawal since existing, FAA-approved maintenance programs include corrosion prevention and control measures equivalent to the proposed rule; the rulemaking would have imposed redundant requirements with no measurable benefit.

[3] ATA comments to the Aging Airplane Safety Interim Final Rule, Docket No. FAA-1999-5401.

6. New Approach for Requirements for Design Approval Holders.

In this notice, FAA describes its consideration of an amendment to FAR Part 25 that would require design approval holders (i.e., manufacturers, including type certificate and supplemental type certificate holders and applicants) to develop, by a specified date, the data and documents necessary to support operator compliance with an operating rule. The new requirement would apply to "continued airworthiness issues" in which operators must rely on the data or documents of the DAH in order to comply with an operating rule, as is the case with each of the current Program rulemaking initiatives.

ATA fully supports the goal of FAA's the new approach. Operators have long advocated a new approach to rulemaking in which a compliant, FAA-certificated or -approved product is available, or sufficiently mature, before FAA adopts a regulatory deadline for incorporating the product on aircraft. The data and documents that FAA may require of design approval holders (DAHs) may be regarded as "products;" sound program planning principles say that they, too, should be approved before the installation deadline. Further, the FAA should consider including other products, such as parts, in the amendment. For Part 121 operators, the imperative is an amendment to ensure compliance periods applicable to operators are realistically planned, effectively supported, and reserved solely for the actions required of operators so that the products required for incorporation or installation are available to operators at the start of their compliance period.

ATA also agrees with FAA's proposal to amend Part 25 to reflect this requirement because this location would provide the most straightforward and durable implementation.

The specific provisions to implement FAA's envisioned amendment likely will generate different points of view within the industry. As explained below, ATA and its members agree with FAA's analysis as described in the informational notice. If the Administrator concludes that DAH action is necessary to maintain or regain, within a certain time frame, the level of safety originally expected of in-service airplanes, FAA should define the matter as a "continuous airworthiness issue," establish a compliance plan, and require any DAH support necessary to resolve the matter. Too often, resolution of such issues has languished because parties could not agree on whether the issues constituted "unsafe conditions" (which require DAH support under Part 39). The regulations should acknowledge that not all continuous airworthiness issues are known when an airplane is certificated, and that DAH support may be required to resolve, in a timely manner, certain issues that arise in service.

The amendment should clearly articulate the circumstances under which the new approach would require DAHs to develop a product, and how those requirements would be applied. Normally, the action would be required of the original DAH If the DAH were no longer in business, incentives could be offered to potential DAH applicants. Phased scheduling may be required in cases where the development of a product by a supplemental type certificate holder cannot be accomplished or approved until after the type certificate holder develops the baseline. Requiring development of a product by a DAH would carry some assurance that installation or incorporation of the product was planned; however, the amendment should allow compliant solutions developed by the original DAH, or by new applicants.

This new approach would be an important first step in integrating fundamental program management principles into rulemaking. In addition, it would expeditiously resolve continued airworthiness issues that emerge in service. However, the amendment would affect numerous stakeholders and involve important regulatory and commercial issues. A summary of ATA's preliminary recommendations regarding the new approach are as follows:

- In view of the nature of FAA's notice about the envisioned amendment, few details about criteria and implementation, and relatively short comment period, FAA should consult with industry to consider and evaluate the impact of this approach, including ways to avoid any unintended consequences.

- The amendment should reflect FAA's intent to use fundamental program management principles to establish realistic compliance periods for DAHs, FAA certification offices, and operators (in sequence if necessary).

- The amendment should reflect that the uncertain nature of development efforts would be taken into consideration when establishing compliance periods, and that industry study groups may be used to establish realistic compliance periods.

- The amendment should state that FAA intends to define the product expected of a DAH as specifically as possible and that the product must be delivered to FAA for certification or approval within the compliance period in a form ready for direct installation or incorporation pursuant to an associated operating rule.

- The amendment should clearly define "continuous airworthiness issues" and state that the Administrator will make the determination as to whether an issue is a "continuous airworthiness issue."

Although these preliminary comments demonstrate ATA's full support for FAA's efforts to coordinate and streamline the different components of the Program, we look forward to commenting on the specifics of each component when the proposed or revised rulemaking documents are published in the Federal Register. Please contact me concerning any questions about these comments or if either ATA or its member airlines can provide further support or data to FAA.

Sincerely,

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ATA Detailed Comments - Docket No. FAA-2004-17681
Fuel Tank Safety Compliance Extension and Aging Airplane Program Update

III. ATA Detailed Comments.

1. The Fuel Tank System Safety Rule. The FAA adopted SFAR 88, also known as the "Fuel Tank System Safety Rule", in part to amend FAR Part 21 and require holders of type certificates and supplemental type certificates to develop and submit to FAA improved instructions for maintaining and inspecting fuel tank systems.[1] The Part 121 operating rules of SFAR 88, in turn, require carriers to incorporate into their maintenance programs FAA-approved instructions for the maintenance and inspection of fuel tank systems, and to include procedures to address the actual configuration of each in-service airplane. Without question, FAA intended the maintenance and inspection instructions developed by manufacturers to provide the foundation on which operators could comply with the operating rules, and meet one of the prime objectives of the Fuel Tank System Safety Rule -- to prevent the development of ignition sources in fuel tanks.

In its update of the Aging Airplane Program, the FAA illustrated difficulties encountered in the conduct of the Fuel Tank System Safety Rule. Design approval holders did not fully develop the maintenance and inspection tasks needed by operators to comply with the operating rules. The Fuel Tank System Safety Rule did not clearly define the expected content of the instructions, or the operator maintenance programs. For these and other reasons, the FAA extended from December 6, 2004, to December 16, 2008, the period for complying with the operating rules of SFAR 88. The FAA further stated that the operating rules interact with other rulemaking initiatives of the Aging Airplane Program. In view of these considerations, FAA now views the Fuel Tank System Safety Rule as part of the Aging Airplane Program, and states that it may further amend the operating rules to clarify several provisions.

The ATA concurs with FAA's general direction with the Fuel Tank System Safety Rule. The ATA has submitted comments strongly supporting the extension of the compliance period of the operating rules of SFAR 88.[2] In view of the current status of the development and approval of the prerequisite maintenance and inspection instructions, operators clearly need the extension in order to comply with the operating rules before the termination of the compliance period. In addition, the numerous airworthiness directives issued over the last eight years to correct hardware and design concerns in fuel tank systems, and ADs that will flow from the SFAR 88 design reviews, allow the FAA to adopt the extension while the level of safety of in-service fuel tank systems is actually improving.

With respect to the operating rules of SFAR 88, the ATA concurs with FAA's general plans. The operating rules have remarkable similarity to those of other Aging Airplane Program initiatives in terms of general program strategy, program and compliance planning considerations, maintenance scheduling, and in the case of the Enhanced Airworthiness Program for Airplane Systems (EAPAS), technical requirements. In these respects, inclusion of the Fuel Tank System Safety Rule as part of the Aging Airplane Program is appropriate.

The ATA also concurs with FAA's intent to clarify: 1/ the operating rule requirement to assess the "actual configuration" of fuel tank systems; 2/ the configuration elements that directly affect fuel tank system safety; and 3/ the roles and responsibilities of the principal airworthiness inspectors in approving

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[1] 66 Fed. Reg. at 23085 (Docket No. FAA-1999-6411, May 7, 2001) published SFAR No. 88, "Transport Airplane Fuel Tank System Design Review, Flammability Reduction, and Maintenance and Inspection Requirements".

[2] ATA submitted, on August 30, 2004, comments to 69 Fed. Reg. at 45935 (Docket No.FAA-2004-17681, July 30, 2004). 69 Fed. Reg. at 51940 (Docket No.FAA-2004-17681, August 23, 2004) extended from August 30, 2004, to September 29, 2004, only the period for submitting comments on FAA's plans for the Aging Airplane Program.

upgraded operator maintenance programs. These clarifications would address key lessons learned to date in the conduct of SFAR 88.

Recommendations. The FAA plans to issue guidance to ensure the DAHs are fully aware of what is necessary to show compliance with SFAR 88. The ATA and several of its members participated in the development of this guidance, culminating in the submission of comments to proposed Policy Statement PS-ANM100-2004-10029. The ATA agrees that such guidance is needed to "...guarantee that operators have the documents they need to comply with the Fuel Tank Safety Rule's operational rules."[3] However, the ATA comments submitted highlight that the guidance should be published as an advisory circular, issues remain regarding manufacturer / operator processes for identifying critical components and features, that an additional advisory circular should be published to provide guidance for operators, and that the guidance should be revised to address a number of specific issues.[4] The ATA comments to proposed PS-ANM100-2004-10029 are attached, and we recommend that FAA take them into consideration and develop an advisory circular that would supersede PS-ANM100-2004-10029, and develop a supplementary advisory circular that focuses on guidance carriers may use to assist in complying with the operating rules. Further, the ATA recommends that FAA strive to develop and publish guidance material for carriers before, or concurrently with, publication of the proposed and final rules, respectively.

The ATA recommends that FAA propose a revised, overall compliance plan for SFAR 88 that provide realistic periods of time between program milestones. There should be a realistic period between FAA's approval of the type certificate holder's maintenance and inspection instructions, and the development and approval of any supplemental instructions required of supplemental type certificate (STC) or other DAH holders. In turn, there should be a realistic period between the approval of any necessary STC or DAH holder's instructions, and incorporation of all applicable instructions into the maintenance programs of operators. For program planning purposes, the period of time between these latter two milestones should be at least one year.

The ATA concurs with FAA's intent to "... contact all design approval holders and provide them with necessary information on our expectations for determining what maintenance and inspection tasks SFAR 88 requires, and when they must provide these tasks". However, we suggest that FAA should implement this intention with more specificity. A proposal to revise SFAR 88 should define FAA's expectations as a 'deliverable' due to FAA within a compliance period in a form ready for incorporation directly into operator maintenance programs.

The FAA stated that in order to prevent needless overlap or conflict with EAPAS (discussed in the following section) it plans to propose the clarified operating rules of SFAR 88 as a part of the EAPAS rulemaking.[5] As discussed below, the ATA supports consolidating the requirements of SFAR 88 with EAPAS, and agrees that compliance plans for the two programs should be coordinated, and maintenance plans clearly should be aligned. However, because a number of DAHs, regional offices and operators would be involved in accomplishing the two programs, planning, progress, and regulatory requirements for the programs should not be so inextricably linked that a delay in one program would jeopardize compliance in the other. Special attention should be given to constructing the programs to work in unison

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[3] 69 Fed. Reg. at 45939 (Docket No. FAA-2004-17681, July 30, 2004).

[4] In a notice (69 Fed. Reg. at 30743, dated May 28, 2004, FAA requested comments to proposed Policy Statement PS-ANM100-2004-10029. ATA submitted comments to the Transport Airplane Directorate (ANM-112) on July 1, 2004.

[5] 69 Fed. Reg. at 45939 (Docket No. FAA-2004-17681, July 30, 2004).

toward common or similar program milestones.

2. The Enhanced Airworthiness Program for Airplane Systems (EAPAS). The FAA stated it intends to propose a rule that, if adopted, would require DAHs for transport category airplanes to make changes to existing Instructions for Continued Airworthiness, and would require operators to incorporate the changes into their regular maintenance programs. The program is based on recommendations of the Aging Transport Systems Rulemaking Advisory Committee (ATSRAC), and is intended to improve maintenance information for wiring systems, and address electrical wiring system malfunctions and contamination. The FAA believes that since the SFAR 88 (the "Fuel Tank Safety Rule"), and the EAPAS proposal have similar elements and operational requirements, it is appropriate to combine the operational requirements of the two programs.

The FAA also intends to strengthen the design requirements for wire systems by moving existing regulatory references to wiring into a single section of the regulations specifically for wiring; and adding new certification rules to ensure the safety of wire systems.

The ATA concurs with the intent of the EAPAS. The ATA and several ATA member airlines participated in the ATSRAC effort to draft an EAPAS proposed rule and associated guidance material. The ATA supports FAA's intentions for EAPAS insofar as they adheres to the direction set in the ATSRAC effort. The ATA agrees that the Fuel Tank System Safety Rule and the EAPAS initiative have similar compliance strategies and operational requirements, and that the requirements of the two programs should be consolidated to provide efficiencies in maintenance scheduling and training, and to avoid redundant or overlapping requirements.

The ATA supports moving existing regulatory references to wiring into a single section of the regulations as a measure that would improve the visibility of wiring issues, and better facilitate maintenance and training. With respect to new certification rules to ensure the safety of wire systems, operators would be interested to know of any intention to apply those rules to in-service airplanes.

Comments applicable to the envisioned EAPAS requirement for DAHs to develop the necessary Instructions for Continued Airworthiness (i.e., documents) are provided below in Section 6, "New Approach for Requirements for Design Approval Holders". This requirement would be remarkably similar to a corresponding requirement of SFAR 88, and lessons learned in the conduct of SFAR 88, also discussed in Section 6, should be applied to the EAPAS requirement.

Recommendations. Certain recommendations for the Fuel System Safety Rule cited in the preceding section apply equally to the EAPAS. The applicable recommendations include those regarding the timing for the proposal and publication of guidance material, and compliance plans that establish realistic program milestones and compliance periods.

3. The Aging Airplane Safety Interim Final Rule. The Rule requires certain transport airplanes having more than 14 years in service to undergo periodic FAA inspections and records reviews to ensure age-sensitive parts and components are maintained in an acceptable and timely manner. The Rule also bans operating these airplanes after December 5, 2007 unless the operator includes damage tolerance-

based inspections and procedures in its maintenance or inspection programs, in order to ensure the continued airworthiness of fatigue-sensitive parts and components.[6]

The FAA states that based on comments received, FAA is considering limiting the applicability of requirements for damage tolerance-based inspections and procedures to airplanes initially type certificated with 30 or more passenger seats or a payload capacity of 7,500 pounds or more that are transport category airplanes operated under Part 121, or U.S.-registered airplanes operated Part 129. The FAA also may task the Aviation Rulemaking Advisory Committee (ARAC) to establish guidelines for the development of damage tolerance programs that will support compliance with the rule, and require the direct participation by DAHs to develop the programs. The FAA also may extend the compliance of the Rule to December 20, 2010.

The ATA concurs with FAA's direction with Aging Airplane Safety Interim Final Rule. Several ATA member airlines participated in the extensive efforts of the ARAC Airworthiness Assurance Working Group ("AAWG") in support of the Aging Airplane Program, including efforts relevant to the development Aging Airplane Safety Interim Final Rule ("AASIFR"). The ATA supports FAA's intentions for the AASIFR which address several difficult issues discussed in the original ATA comments to this interim rule.[7] Specifically, and as recommended in the ATA comments, we strongly support FAA in tasking the Aviation Rulemaking Advisory Committee (ARAC) to establish guidelines for the development of damage tolerance programs that will support compliance with the AASIFR. We note that that the tasking has already been issued to the ARAC AAWG. The ATA and its member airlines look forward to continued participation in AAWG tasking, which has always enjoyed the voluntary participation of technical experts from the industry, particularly DAHs.[8]

Consistent with our comments on FAA's new approach regarding requirements for DAHs (see Section 6 below), the ATA also agrees with FAA's intention to require the direct participation by DAHs to develop the guidelines and procedures that will enable operators to develop a damage tolerance-based inspection programs, and for developing guidance that can be used by DAHs and ARAC Structural Task Groups to support the development of model specific damage tolerance-based inspection programs.

The ATA strongly concurs with FAA's plan extend the compliance period of the Rule to December 20, 2010. The extension is consistent with our best estimate of the time required to develop the damage tolerance program guidance material for both operators and DAHs, and is necessary to accommodate this challenging development program, and in turn, compliance with the AASIFR operating rules. In the final rule, FAA should make clear that the compliance period of the operating rule applies to incorporating damage tolerance procedures and schedule intervals into maintenance programs, and not to the actual performance of the procedures.

Recommendation. The ATA recommends that FAA support the formation of an industry council to reviews the results of inspections required by the AASIFR under §121.368 for the purpose of developing a basis by which statutory requirements of the 1991 Aging Airplane Safety Act may be significantly

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[6] 69 Fed. Reg. at 72726 (Docket No. FAA-1999-5401, December 6, 2002), published the Aging "Airplane Safety Interim Final Rule'.
[http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2002/02-30111.htm]

[7] ATA Comments to the Aging Airplane Safety Interim Final Rule, Docket No. FAA-1999-5401, May 5, 2003. [http://dmses.dot.gov/docimages/p75/242237.pdf]

[8] 69 Fed Reg. notice at 26641, May 13, 2004, Task Assignment for the Aviation Rulemaking Advisory Committee. [http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2002/pdf/02-30111.pdf]

reduced. The industry has consistently stated that they do not believe that the §121.368 inspections increase safety, and reducing requirements to inspect each airplane would significantly lessen the burden on the industry and FAA.

4. The Widespread Fatigue Damage Program. The FAA stated it intends to propose a rule that, if adopted, would require operators to incorporate into their FAA-approved maintenance program a program to preclude widespread fatigue damage (WFD). The proposal would be based on recommendations from ARAC, and would limit the operation of airplanes that are approaching or have exceeded their expected service life in either total flight cycles or hours. To operate an airplane beyond established limits, the rule would require more inspections, modifications or replacement actions to be incorporated into the operator's maintenance program. As with the Aging Airplane Safety Interim Final Rule, in order to comply with the WFD operating rule operators would require data and documentation that likely could not be obtained from sources other than design approval holders. Accordingly, the proposed rule would require design approval holders to develop the necessary data and documents.

The ATA concurs with the intent of the WFD program. Several of our members participated in the ARAC Airworthiness Assurance Working Group (AAWG) effort to draft a WFD proposed rule and associated guidance material. Drafts were submitted to FAA in June, 2001,[9] and supplemental reports were submitted in October, 2003.[10] The ATA supports FAA's intentions for WFD insofar as they adhere to the direction set in the AAWG effort. Specific compliance actions and periods, coordination of those actions and periods with other aging airplane initiatives, and the potential impact of the rule on aging airplanes in-service warrant close evaluation by a broader spectrum of potentially-affected operators.

Comments regarding a requirement for design approval holders to develop the necessary WFD data and documents are provided below in section 6, "New Approach for Requirements for Design Approval Holders". Unique with respect to the WFD program is that the data and documents would be necessary to extend the operation of an airplane beyond an established age limit whereas other rulemaking under the 'new approach' would require the data and documents in order to operate airplanes of any age.

Recommendations. The ATA recommends that FAA provide greater visibility into the specifics of the WFD program before publishing it as a proposed rule. Further, the proposal may warrant a substantial comment period.

5. The Corrosion Prevention and Control Program (CPCP). FAA stated that it was considering withdrawing a Notice of Proposed Rulemaking (NPRM) that, if adopted, would require that operator maintenance or inspection programs to include FAA-approved corrosion prevention and control programs. This action would apply to all airplanes operated under Part 121, all U.S. registered multi-engine airplanes operating under Part 129, and all multi-engine airplanes used in scheduled operations under Part 135. The FAA recently withdrew the NPRM, indicating that actions by the industry and the FAA have made the proposal unnecessary.[11]

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[9] The ARAC Transport Aircraft Engine Issues Group (TAEIG) submitted to FAA a draft widespread fatigue damage proposed rule and draft Advisory Circular 91-56BX. (TAEIG letter to AVR-1, dated June 29, 2001.) [www.faa.gov/avr/arm/arac/aractasks/aracwidfatrecommendation.cfm?nav=6]

[10] The ARAC TAEIG submitted to FAA draft supplemental reports regarding training, multi-element damage, and mandatory modifications. (TAEIG letter to AVR-1, dated October 22, 2003.) [www.faa.gov/avr/arm/arac/aractasks/tae_airworthiness_recommendation_6.cfm?nav=6]

[11] 69 Fed. Reg. at 50350, (Docket No. FAA-2002-13458, August 16, 2004).

The ATA concurs with FAA's action. Effective corrosion prevention and control programs are necessary throughout the life of an aircraft to ensure the static and fatigue strength of its structure meets certification requirements. Existing FAA-approved maintenance programs include corrosion prevention and control measures equivalent to the proposed rule, and the rulemaking would have imposed redundant requirements.

6. New Approach for Requirements for Design Approval Holders (DAHs). The FAA stated that it may propose an amendment to FAR Part 25 that would require DAHs (i.e., manufacturers, including type certificate and supplemental type certificate holders and applicants) to develop, by a specified date, the data and documents necessary to support compliance with an operating rule. The new rule would apply to continued airworthiness issues in which operators must rely on the data or documents of the DAH in order to comply with an operating rule, as is the case with each of the Aging Airplane Program rulemaking projects described herein (except the withdrawn CPCP proposal).

The ATA concurs with the general intent of the new approach. The ATA strongly supports the intent of new approach, however, the specific method of implementing that intent requires careful consideration.

Operators support a new approach to rulemaking in which a compliant, FAA-certificated or -approved product is available for delivery before adopting a regulatory deadline for incorporating the product. This objective makes common sense, but in the past, the opposite has occurred -- rules with compliance deadlines applicable only to operators have been adopted well before any compliant product was designed. In these cases, DAHs and prospective DAHs had no regulatory deadline or incentive to produce a compliant product, and all schedule risks associated with the work and functions of DAHs were absorbed by the affected transport operators. The ATA has termed such rules as "DCPI rules" because a product must be designed, certificated, produced, and installed within a compliance deadline that applies only to operators who can only accomplish installation after a compliant product is delivered. We note that DCPI rules often have been adopted to act on issues of particular importance, visibility, or urgency, and that had a significant impact on operators. Examples include: B727 freighter-conversion floor airworthiness directives; metallized Mylar™ airworthiness directives; B737 Rudder Power Control Unit airworthiness directive; and a Part 121 rule to install strengthened flight deck doors. Although the flight deck door rule clearly was a necessary national security requirement, it does illustrate the problem with DCPI rules. Over half of the operating rule's 18-month compliance period had expired before FAA certificated the first of 22 door designs needed to equip ATA member airlines, causing significant disruptions in airplane availability. Further, neither operators or DAHs are positioned to authoritatively comment on the economic impact of a pending DCPI rule. For example, government grants to cover the documented costs of parts and direct labor for installing strengthened doors eventually funded over three times the amount originally programmed for large transports. Issues with DCPI rules has been discussed with FAA and manufactures in several forums, and operators clearly have cause to support the new approach that can resolve DCPI rule issues in some cases.

FAA's intentions for the Aging Airplane Rules would be an appropriate first step to avoid the pitfalls of DCPI rulemaking. The data and documentation that FAA intends to require of DAHs constitute products, and those products likely will not have been designed and developed at the time the associated aging rule is proposed. Accordingly, FAA's intention to require the development of those products by a specified date in order to support a subsequent operating rule deadline is logical. However, FAA should consider including other products, such as parts, in its intended amendment to Part 25. Further, the exact method of implementing FAA's intentions likely may generate deliberation within the industry. For Part 121 operators, the imperative is an amendment that ensures that compliance periods applicable to operators are realistically planned, effectively supported, and reserved solely for the actions required of operators.

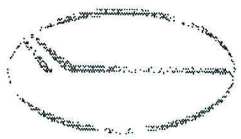
The FAA stated that it intends to implement its new approach by amending Part 25, "Airworthiness Standards: Transport Category Airplanes". There may be alternatives that also could address the imperative of operators. The ATA believes that amending Part 21, "Certification Procedures for Products and Parts", should be considered, provided its applicability to Part 23, "Airworthiness Standards: Normal, Utility, Acrobatic, and Commuter Category Airplanes", could be appropriately limited. For thoroughness, Part 33, "Airworthiness Standards: Aircraft Engines", also should be addressed. Special Federal Aviation Regulations could be used on a rule-by-rule basis, provided that the tenants of FAA's stated intentions for Part 25 were documented elsewhere. Sequential rules also could be used. For example, a Part 25 or similar rule could require the design and development of a product followed, when the product was certificated or sufficiently mature, by the proposal for an operating rule to install or incorporate the product. Although there may be other alternatives, ATA regards FAA's plan to amend Part 25 as the most straightforward and durable vehicle. The most appropriate location for FAA's new approach warrants further consultation with the industry.

As discussed earlier, the specific implementing provisions of FAA's intentions for Part 25 likely will generate different points of view within the industry. The FAA stated that the new approach would apply to "airworthiness issues". The ATA concurs with this intent, but to address potential industry concerns FAA should carefully define "airworthiness issues". The FAA has a vehicle in Part 39 for resolving "unsafe conditions". However, there is a grey area between "unsafe conditions" and "product improvements", and this grey area could be defined as "airworthiness issues". Product improvements are easily identified as measures that improve existing performance characteristics, operational procedures or levels of safety. However, whether a particular concern is an airworthiness issue or an unsafe condition is in many cases a contentious and debatable matter. For example, many rulemaking initiatives have mandated corrective actions based on new interpretations or treatment of applicable certification standards, years after-the-fact findings of non-compliance with original certification standards, new certification test results, or indirect changes in certification standards through changes in policy or guidance material. Certainly, non-compliance with certification standards does not necessarily indicate that an unsafe condition exists. However, DAHs currently may have little business, regulatory, or liability incentive to enthusiastically support rules applicable to operators that do not involve an unsafe condition or product improvement. The resolution of such debatable matters often are termed "enhancements", and the term can carry significant cost implications for operators and schedule implications for regulators. If FAA finds DAH action necessary to maintain or regain, within a certain time frame, the level of safety originally expected in in-service fleets it should clearly define "airworthiness issue", address them as continuous airworthiness obligations, and require the DAH support necessary to resolve the matter, contentions notwithstanding. We believe FAA has the authority to adopt new regulations to achieve this objective.

Another key factor in addressing industry concerns may be achieved by more specifically stating how the new approach would apply to DAHs and DAH applicants. For example, any amendment should provide that a DAH would be required to develop a product by a specified date only if the DAH was the original source of the pertinent product (eg, equipment, parts, appliance, data, or document). Potential DAH applicants could be encouraged to develop the necessary product provided they would commit to a final application for certification or approval of the product, as applicable, by the date specified in the compliance plan. This latter provision may provide a method to better address situations wherein the original source is no longer in business, such as is the case with surrendered STCs, taking into consideration that development may take longer.

Recommendation. FAA intends to amend Part 25 to require DAHs to develop, by a specified date, data and documents necessary to resolve continued airworthiness issues in which operators must rely on the data or documents of the DAH in order to comply with an operating rule. In summary, the ATA believes

FAA's new approach would be an important first step in integrating fundamental program management principles into rulemaking, and expeditiously resolving continued airworthiness issues that emerge in service. However, FAA's plans would affect numerous stakeholders, and involve complex regulatory and commercial issues. The ATA concurs with FAA's direction, but recommends comprehensive consultation with industry to avoid unintended consequences.



Air Transport Association

July 1, 2004

Federal Aviation Administration
Transport Airplane Directorate
Transport Standards Staff, Propulsion/Mechanical Systems Branch, ANM-112
1601 Lind Avenue SW
Renton, WA 98055-4056

Attn: Mr. Dennis Kammers

Re: **Comments to Policy Statement No. PS-ANM100-2004-10029:** Process for Developing Instructions for Maintenance and Inspection of Fuel Tank Systems Required by SFAR88; 69 Fed. Reg., Vol. 104, May 28, 2004

Dear Mr. Kammers:

The Air Transport Association of America, Inc. ("ATA") submits these comments in response to a notice of the availability of proposed policy on a process to be used by holders of type certificates and supplemental type certificates to develop Airworthiness Limitations and instructions for maintenance and inspection of the fuel tank systems of certain transport category airplanes, as required by Special Federal Aviation Regulations Number 88 (SFAR 88). Member airlines of the Air Transport Association[1/] currently operate a fleet of 4,474 large transports that would be affected by the policy.

We welcome and appreciate the opportunity to comment on an FAA-internal policy that clearly would affect the ways in which operators comply with the operating rules SFAR 88. Operators concur with the need to publish guidance to support compliance with this complex SFAR. We provide below general comments on the most significant aspects of the proposed policy. Detailed comments, some of which support the following general remarks, are provided in Enclosure 1:

General Comments:

- An Advisory Circular is Preferred. The appropriate vehicle for the type of guidance in the proposed memorandum is an advisory circular (AC). Although operators consider such guidance essential in facilitating their compliance with the operating rules of SFAR 88, concern exists over the precedent of publishing this important guidance in an FAA-internal document that is subject to change without public comment or involvement.

[1] ATA members are ABX Air, Alaska Airlines, Aloha Airlines, America West Airlines, American Airlines, ASTAR Air Cargo, ATA Airlines, Atlas Air, Continental Airlines, Delta Air Lines, Evergreen International Airlines, FedEx Corporation, Hawaiian Airlines, Jet Blue Airways, Menlo Worldwide Forwarding, Midwest Airlines, Northwest Airlines, Polar Air Cargo, Southwest Airlines, United Airlines, United Parcel Service, and US Airways. Our associate members are Aeromexico, Air Canada, Air Jamaica, and Mexicana.

Exhibit 2

We question whether an internal document will prove as effective as an AC in assuring the support of type certificate (TC) holders in complying with the operating requirements of SFAR 88. Further, the proposed policy focuses on guidance for FAA staff in determining the compliance of TC holders with the SFAR -- little guidance directly applicable to operators is provided. These concerns also apply to significant rules that may be proposed in the near future to address widespread fatigue damage and aging wiring systems. We recommend that FAA propose the guidance as an AC before, or concurrently with, adoption of the policy memorandum, and initiate a follow-on guidance that focuses on coordinated methods of compliance by operators.

- Policy for Critical Design Configuration Control Limitations and Component Maintenance Manuals is a Concern. A provision of significant concern to operators is the policy proposed regarding Critical Design Configuration Control Limitations (CDCCLs) and Component Maintenance Manuals (CMMs). The proposal would encourage designation of CDCCLs at the component level, and would, in effect, mandate use of the design approval holder's CMM for any repair to a component designated as a CDCCL. Policy should not have the effect of new regulatory action, and the objectives of SFAR 88 would be better met, and would have less impact on manufacturers, operators and FAA if CDCCLs were designated at the part level. Detailed comments on this issue, its potential impacts, and recommendations are provided in Enclosure 1.

- The Policy Should Define the Terms "Parts" and "Components". The proposed policy's lack of definitions for "parts" and "components" applies directly to the important matter of intelligently designating CDCCLs, as discussed above. The comments herein are based on two assumptions: that components are made of parts; and that fuel pumps are components. Comprehensive definitions are required, and should be developed in coordination with industry.

- Processes for Supplemental Type Certificate Holders Require Focus. The proposed policy focuses on guidance for FAA staff in determining the compliance of TC holders with applicable requirements of SFAR 88. The policy also should address unique considerations in how FAA will process nearly 50 applicable Supplemental Type Certificates (STCs). We recommend that FAA reference in the policy memorandum a single source, available to the public (eg, a fixed web page), that it will use to display FAA's determination of the STCs and STC holders to which SFAR 88 applies, and any changes in these determinations. The policy memorandum should also provide for notification of STC holders if FAA makes any change in a determination applicable to the holder's STC. The single source also should be dated, and display the schedule and results of the Maintenance Action Advisory Boards (MAABs) of individual TC and STC holders, and other milestone information by which operators may monitor the progress of TC and STC holders in adhering to the provisions of their compliance plans on which operators are dependent for compliance with the operating rules (eg, the planned delivery date of FAA-approved maintenance and inspection instructions for maintenance significant items (MSIs).).

- Guidance is Needed for Complying with the Operating Rules of SFAR 88. As discussed above, the proposed policy focuses on guidance for FAA staff in determining the compliance of TC holders with applicable requirements of SFAR 88. A need still exists to provide guidance to operators on complying with the Part 91, 121, and 129 operating rules of the SFAR. For example, no guidance has been proposed or published for complying with the requirement for operators to assess the "actual configuration" of their airplanes with respect to fuel systems. Enclosed comments to the proposed policy memorandum further illustrate the need for specific guidance for operators, and may assist in the development of that guidance material as a follow-on action.

- Detailed Guidance is Needed for Developing Compliance Plans. Compliance planning, both for resolving conditions determined to be unsafe and 'safety significant' items, is a provision of the proposed policy of significant importance to operators. For example, standard periods for complying with airworthiness directives should be used whenever possible to minimize fuel tank entries. Several of the enclosed comments provide specific recommendations that would provide for more detailed compliance planning.

We appreciate the opportunity to contribute comments to this proposed policy and thank you for your consideration of these views.

Sincerely,

Joe White
Director, Engineering

Cc: EMMC, AC, FSSTF
Mr. Ali Bahrami
Mr. M. Zielinski
Mr. M. Giordano

Enclosures

Detailed Comments
to
Draft Policy Memorandum PS-ANM100-2004-10029

Recommended changes to the text of the proposed policy memo are shown in ***bold italics***.

1. Page 1 of 34, "Summary" paragraph 3: Broaden to state; "...maintenance and inspection of the fuel tank ***and fuel distribution*** system..."

   Justification: "tank" refers to structure, and not to the system.

2. Page 2 of 34, paragraph 2.b.: Delete the date from the reference; "AC 121-22A, "Maintenance Review Board Procedures," March 7, 1997".

   Justification: As in paragraph 2.a., the policy memo should refer to the current version of the advisory circular (AC).

3. Page 2 of 34, paragraph 2.: AC 120-16D, "Air Carrier Maintenance Program" should be added as paragraph 2.c. Further, the terminology "Maintenance or Inspection Programs" used throughout the proposed policy should be changed for standardization with the terminology "Scheduled Maintenance" and/or "Unscheduled Maintenance" used in AC120-16D, as applicable: This applies to the text of the proposed policy in several areas, which are identified individually in the following comments.

   Justification: Standardization. Since the proposed memorandum would effect revisions of operator maintenance programs it should use terminology that is consistent with that used in the AC120-16. In several instances, the proposed memorandum refers to "maintenance or inspection programs" that, per AC120-16 terminology, should be identified as "scheduled maintenance" and/or "unscheduled maintenance".

4. Page 2 of 34, paragraph 3.b.: Delete paragraph 3.b. which references a draft AC, and delete references to that AC on pages 4, 5, 15, 20, 21, 26, of 34 of the policy memo.

   Justification: Draft guidance material is subject to changes that can substantially modify the content or intent of the guidance, including decisions that could delay or cancel the issuance of the guidance.

5. Page 3 of 34, Section 2, definition of "Enhanced Airworthiness Program for Airplane Systems (EAPAS)". Revise the last sentence of the definition to read as follows.

   "The airworthiness authorities, ***present*** and future transport operators, repair stations, and manufacturers will ***be required to*** incorporate these enhancements into their certification, maintenance, training, modification, and design programs to prevent certain aging systems characteristics ***from occurring in aircraft systems such as wiring systems***."

Justification:

a. Accurate tense -- EAPAS requirements may be adopted in the future.

b. The reference to wiring systems should be revised to reflect that such systems are just one of several systems under the consideration of the EAPAS.

6. Page 4 of 34, Section 2, definition of "Enhanced Zonal Analysis Procedure (EZAP)". The second and last sentences should be removed and the paragraph should refer to scheduled maintenance. The revised paragraph would read as follows:

   "A logical structured process for developing ***scheduled maintenance requirements*** for electrical wire interconnection systems (EWIS). Applying EZAP will ensure that sufficient attention is given to the EWIS of the fuel tank system during development of ***scheduled maintenance requirements***.'

   Justification: Consistency with items 3. and 4., above.

7. Page 4 of 34, Section 2, definition of "Maintenance and Inspection Instructions". The title of this definition should be changed to "***Scheduled Maintenance Requirements***", and the paragraph should be changed to read as follows:

   "Schedule maintenance requirements developed by the design approval holders and used by operators to create their maintenance programs. The information provided in the instructions should be sufficient for the development of job aid or task cards, used by operators for implementation of the instructions."

   Justification: Consistency with item 3., above.

8. Page 4 of 34, Section 2, definition of "Maintenance Review Board": The definition should be changed to read "***A regulatory*** group that supports the development of the Maintenance Review Board Report."

   Justification: As discussed in Advisory Circular 121-22A, the MRB is a regulatory group.

9. Page 5 of 34, Section 2, definition of "Maintenance Review Board Report": The definition should be changed to read:

   "A document that provides ***scheduled maintenance requirements (or Maintenance Time Limitations, refer to AC120-16D)*** for a particular airplane model. Operators may incorporate those provisions, along with other maintenance information contained in the Instructions for Continued Airworthiness, into their ***maintenance programs."***

   Justification: Consistency with item 3., above.

10. Page 5 of 34, Section 2, definition of "Maintenance Significant Item": The first sentence of the second paragraph of the definition should be changed to read:

> "In terms of development of ***scheduled maintenance requirements*** for SFAR 88, MSIs include systems, sub-systems, modules, components, accessories, units, or parts that are identified as safety significant."

Justification: Consistency with item 3., above.

11. Page 5 of 34, Section 2, definition of "Maintenance Steering Group-3": The second sentence of the definition should be deleted and the first sentence should be changed to read:

> "A voluntary structured process developed by ***the industry and maintained by*** ATA to make decisions used to develop ***scheduled maintenance requirements f***or an airplane."

Justification: Consistency with item 3., above, and accurate portrayal of the development of MSG-3.

12. Page 6 of 34, section 3.A., paragraph 4, third sentence reading: "The FAA found that, in most cases, the fire or explosion was associated with faulty design, lack of maintenance, or improper modification of fuel pumps." Revise to read: "The FAA found that, in most cases, ***a*** fire or explosion ***could be associated with faulty design or production, improper operation, or improper maintenance***."

Justification: As written, this sentence asserts an unsupportable justification of problematic provisions of the policy memo regarding fuel pumps. The ARAC Fuel Tank Inerting Harmonization Working Group Team Reports of June 2001 summarizes 16 mishaps caused by fuel tank explosions since 1963. The Report lists no accident in which "improper modification of a fuel pump" was a known or suspected cause. The Report documents that only two of these accidents were accompanied by factors that currently are of concern with respect to fuel pumps (ie, heated center wing tanks (CWTs) containing Jet A fuel vapors), and that the ignition source of those two mishaps was unknown. Subsequent to the publication of the Report, a third mishap of this type occurred (ie, a heated CWT containing Jet A fuel vapors, unknown ignition source). Two of these three accidents were preceded by extensive dry-running of CWT fuel pumps on the ground,[2] 66 Fed. Reg. 20733, Docket No. 2001-NM-94-AD, AD 2001-08-24: "Extended dry operation of the center tank fuel pumps, which had occurred prior to both incidents, is contrary to the manufacturer's procedures for safe operation of the fuel pumps. Extended dry pump operation can result in overheating and excessive wear of the pump bearings and consequent contact between rotating and non-rotating parts of the pumps, and in one of those two cases, the airplane had less than one and a half years in service. In the third mishap, fuel pumps were all but eliminated as a possible ignition source. The preponderance of this data strongly indicates that improper operation (ie, dry-running) of CWT fuel pumps is a much more significant concern than maintenance

[2] 66 Fed. Reg. 20733, Docket No. 2001-NM-94-AD, AD 2001-08-24: "Extended dry operation of the center tank fuel pumps, which had occurred prior to both incidents, is contrary to the manufacturer's procedures for safe operation of the fuel pumps. Extended dry pump operation can result in overheating and excessive wear of the pump bearings and consequent contact between rotating and nonrotating parts of the pumps."

or modification of fuel pumps. Although proper maintenance of fuel pumps clearly is a valid concern, with this sentence as written, the proposed policy letter initiates disproportionate emphasis on the maintenance of components, particularly fuel pumps.

13. Page 6 of 34, section 3.B., first paragraph, last sentence: The sentence should be revised to read:

> "Therefore, historically there have been no life-limited components of fuel tank systems, ***and there has been a lack of standardized maintenance tasks and inspection requirements other than those mandated by airworthiness directives***."

Justification: Accuracy. The statement "...and no inspection requirements - other than requirements for general visual inspections under the zonal concept..." is inaccurate. Per MSG-3, the zonal inspections do not include safety-affected items. Airplanes whose scheduled maintenance requirements were developed under MSG-3 logic did develop tasks that were satisfied, and thus precluded, by the zonal inspection programs. Airplanes whose scheduled maintenance requirements were not derived under MSG-3 had individual inspection tasks assigned to the components installed within the fuel tasks along with general inspections of the fuel system. It should be noted that all the data presented in justifying SFAR 88 applied to airplanes that did not have scheduled maintenance requirements developed under MSG-3. The B707 and B737 Classics were pre-MSG, and their scheduled maintenance requirements were developed using the individual experience of the FAA and the manufacturer without operator input. Further, the B737 has hybrid scheduled maintenance requirements, that is to say, pre-MSG developed requirements that are common between the -100/-200/-300/-400/-500; MSG-2 logic developed tasks on items unique to the B737-300/-400/-500; MSG-3 logic derived task on new structure and pylons for the B737-300/-400/-500; and finally, MSG-3 for the CFM-56 engines.

14. Page 8 of 34, section 3. B., second paragraph: Specific recommendations for revising the paragraph are not offered. However, it should be noted that "on condition" tasks are quantitative in nature -- they test an item against a predetermined specific value. Inspections are part of maintenance. The paragraph should clearly differentiate between event driven maintenance, and schedule maintenance requirements. A scheduled maintenance requirement drives a task to be performed -- if the result of the task is a negative finding, then a "non-routine action" is generated to correct the finding. The non-routine action is event-driven. Engineering staffs should keep in mind that the basic philosophy of modern aircraft maintenance is based on the IRAN (Inspect Repair As Necessary) concept. This is reinforced by the concept of continuous airworthiness in which the airplane is in a continuous state of airworthiness, and that findings only drive an item to be un-airworthy. Once repaired the airworthiness is restored. The last sentence infers that the zonal inspection program precludes all general visual inspections, which is contrary to FAA policy as reflected in MSG-3. The MSG-3 Failure Effect Category 5 (evident safety) and 8 (hidden safety) developed tasks cannot be satisfied, and thus precluded by the zonal inspection program. Refer also to the proposed Appendix A, page 21, process 2.3.

15. Page 7 of 34, section 3. C., second paragraph, last sentence; and third paragraph, first sentence: Revise to read;

> "The purpose of the maintenance and inspection instructions is to ensure the continued airworthiness of the fuel tank system for the operational life of the airplane, ***and they must be submitted for approval to the Aircraft Certification Office (ACO), or office of the Transport Airplane Directorate (TAD), having cognizance over the type certificate for the affected airplane***.
>
> These ***FAA-approved*** instructions form the basis for changes to operators' maintenance programs as required by certain operational rules that were amended as part of the SFAR 88 safety initiative."

Justification: Clarification. The apparent purpose of section C is to provide a review of the requirements SFAR 88, and show how the processes of the proposed policy can satisfy those requirements. The section is a most appropriate opportunity to remind the reader of the intent of paragraph 2(c) of SFAR 88 -- that the ACO will approve the maintenance and inspection instructions of the certificate holder prior to their distribution to operators for incorporation in operator maintenance programs, and subsequent review by the principle inspector.

16. Page 7 of 34, Section 3. C., third paragraph, last sentence: Add a sentence to the last sentence of the paragraph so that the last two sentences read as follows:

> "Based upon a review of these instructions, operators are to propose any changes in their maintenance programs for review and approval by their principal inspectors. ***Maintenance programs revised in accordance with instructions issued by either of the two processes described in the following section are, upon approval by the principle inspector, considered to have met any applicable requirement of the operating rules of SFAR 88 for approval by the ACO or Transport Airplane Directorate***."

Justification: Specificity. Sections 91.410, 121.370(b), 125.248, and 129.32, of Amendment 21-78 (SFAR 88) require operators to obtain approval of their maintenance programs from the ACO, or office of the Transport Airplane Directorate having cognizance over the type certificate of the affected airplane, and to submit any request for approval through the appropriate Principal Maintenance Inspector (PMI). The process delineated in the above sentence of the proposed policy memo implies that FAA would consider ACO- or TAD-approved operator maintenance programs that incorporate maintenance and inspection instructions issued under either of the two processes described in the following section (Section 3.D.) of the proposed policy upon a satisfactory review by the PMI. Therefore, no review of operator maintenance programs by the ACO would be required. The change suggested above would clearly state this implication.

17. Page 7 of 34, Section 3.D., first paragraph, second sentence: Revise to read; "To ensure proper categorization of these instructions, the FAA will require ***processing*** of the maintenance and inspections instructions developed by the design approval holder using two processes."

Justification: Consistency. The proposed policy memo's subsequent description of the two processes for managing maintenance and inspection instructions illustrate that not all of the instructions would require "implementation". Instructions that address conditions that are not unsafe would be resolved through a process that is based on the principles of MSG-3, and may the resolution may not require "implementation" action.

18. Page 8 of 34, section 3.D., last paragraph: Revise the paragraph to read as follows:

> "Considering the complexity of the process of developing necessary maintenance and inspection instructions, it is important for design approval holders to work with the cognizant ***ACO*** to ensure a common understanding of the means of compliance. Therefore, design approval holders should provide a compliance plan as part of the process of developing the instructions required by SFAR 88. ***The plan also should include proposed schedules for the delivery of maintenance and inspection instructions that provide sufficient time for operators to implement the instructions, and gain the approval of their principal maintenance inspectors for the resultant maintenance program, within the compliance period of any applicable operating rule of SFAR 88. The compliance plan also should schedule advance reviews of maintenance and inspection instructions with principal maintenance inspectors who ultimately will approve operator maintenance programs."***

Justification:

The first sentence should name the "cognizant FAA office" or offices with which certificate holders should work to ensure a common understanding of the means of compliance. In the majority of cases it may be assumed that the ACO having cognizance over the type certificate of the affected airplane would be the cognizant office. Naming the FAA offices that typically would have cognizance over the development of the means of compliance is information important to coordinating the development with PMIs, and with operators through the lead airline process.

A third and fourth sentences should be added to emphasize the importance in compliance planning of advance coordination, and providing sufficient time for operators to implement maintenance and inspection instructions.

19. Page 8 of 34, section 3.D., last paragraph, first sentence: The sentence should name the "cognizant FAA office" or offices with which certificate holders should work to ensure a common understanding of the means of compliance. In the majority of cases it may be assumed that the ACO having cognizance over the type certificate of the affected airplane would be the cognizant office.

Justification: Specificity. Naming the FAA offices that typically would have cognizance over the development of the means of compliance is information important to coordinating the development with PMIs, and with operators through the lead airline process.

20. Page 8 of 34, Section 4., first paragraph: The paragraph should state how STCs that will be reviewed by the Mandatory Action Advisory Board (MAAB) will be identified. If the affected STCs are those listed on the FAA Web page provided below, reference should be made to that page, and the page should display a revision date. The page also should be listed on page 2, Section 3, (Other Documents).

    http://qps.airweb.faa.gov/QuickPlace/sfar88ops/Main.nsf/h_Toc/5994d52478fa5b0e8525 6d57005dd530/?OpenDocument

    Justification: Coordination of the MAAB, STC holders, and operators.

21. Page 8 of 34, Section 5., first paragraph, bullet (1): Change to read: " (1) ***Scheduled Maintenance Requirements (or Maintenance Time Limitations, refer to AC120- 16D)***".

    Justification: Consistency with paragraph 3., above.

22. Page 8 of 34, section 4.A., last paragraph, last sentence: The sentence should name the FAA office or offices that would issue airworthiness directives (ADs) to mandate Airworthiness Limitation Items (ALIs). In the majority of cases it may be assumed that the ACO having cognizance over the type certificate of the affected airplane would be the cognizant office.

    Justification: Specificity. Naming the FAA offices that typically would have cognizance over the development of ALIs is information important in coordinating the development of the AD with PMIs, and with operators through the lead airline process.

23. Page 9 of 34, Section 5.A.; The title of the section should be changed to read "**A. *Development of Scheduled Maintenance Requirements (or Maintenance Time Limitations, refer to AC120-16D)***".

    Justification: Consistency with item 3., above.

24. Page 9 of 34, Section 5.A., second paragraph, last sentence: Revise to read; "The practicality of the corrective action, ***including the practicality of material support,*** should also be validated ***in coordination with operators, through processes such as the lead airline process.***"

    Justification: Since unsafe conditions will be resolved through ADs, certificate holders should validate the feasibility of their proposed solutions in close coordination with operators.

25. Page 9 of 34, Section 5.A., last paragraph, last bullet: The following bullet should be added:

    - ***Current Instructions for Ground Operations***

    Justification: Instructions for operating fuel pumps and passenger air conditioning units on the ground, for example, apply to the objectives of SFAR 88.

26. Page 10 of 34, Section 5.B.. Add the following sentence to the end of the first paragraph of the section:

> "***Airworthiness Limitation Items (ALIs) may include CDCCLs, and ALIs and CDCCLs are primary methods for managing and controlling airplane configurations.***"

Justification: The section's discussion of CDCCLs should clearly state and emphasize that Airworthiness Limitation Items (ALIs) may include CDCCLs (Refer to Appendix A, page 20, process step 1.4.), and that ALIs and CDCCLs are primary tools for operators to manage and control aircraft configuration.

27. Page 10 of 34, Section 5.B., fourth paragraph: The paragraph proposes policy that encourages design approval holders to identify Critical Design Configuration Control Limitation (CDCCL) items at the component level. For components identified as CDCCLs, the policy would require the design approval holder to ensure that its Component Maintenance Manual (CMM) provides instructions for ensuring that the critical features of the component are maintained. We strongly recommend that FAA replace the paragraph with the following revised paragraph:

> "The design approval holder must develop maintenance information to prevent inadvertent changes to the design configuration of those features. The design approval holder may define the CDCCLs at the individual part level (e.g., a pump impeller) or the component level (e.g., a pump). ***Unless all design features of a component are, in accordance with the criteria of the safety assessment required by SFAR 88, determined to be critical, and each feature is substantiated as a concern by service experience, the component should not be designated as a CDCCL.***. If the component level is ***used***, the design approval holder is responsible for reviewing the Component Maintenance Manual (CMM) instructions to assure that ***all of the*** critical design ***features*** of the component are addressed."

Justification: As written, the paragraph would, in effect, mandate that maintenance and repair of certain components, particularly fuel pumps, may only be accomplished per the manufacturer's CMM. In turn, the CMM would limit operators to using the manufacturer's replacement parts, piece parts, supplies, tools, test equipment, and in many cases, repair stations. There are several issues with this provision of the proposed policy:

- Manufacturers may not have the logistic capacity to support the policy.
- Any deviation from the CMM, to include a substitution of minor piece parts or use of tooling not listed in the CMM, would, per other provisions of the policy, constitute a "major" repair or alteration, and would require ACO approval. ACOs may not have the capacity to support this aspect of the policy other than by disapproving any requested deviation from the CMM.
- The policy would, in effect, rescind FAA-approval of certain PMA authorities and parts.

- The policy most likely would adversely affect airplane availability, but its impact cannot be adequately estimated until after operators are apprised of the specific CDCCLs that would be identified at the component level.

- CDCCLs identified at the component level would impair the ability of operators to develop supplements to the illustrated parts catalog (IPC), Aircraft Maintenance Manual (AMM), and CMM. Such CDCCLs also would affect process step 1.4.1 on page 20 of 34.

- The policy appears to be based on a presumption that the most streamlined and effective method for preventing in-service problems in complex fuel system components, particularly fuel pumps, is by mandating use of the CMM. Paragraph 13.a., below, explains that following existing standards and procedures to ensure the quality of design, production, and maintenance, and effective oversight of repair work, would be more effective than mandating the use of a particular CMM in resolving in-service issues with existing designs. To further support this aspect of quality, Enclosure 2 lists 30 ADs proposed or adopted since 1993 to correct unsafe conditions in fuel pumps. The preambles of proposed ADs often do not specifically state whether the unsafe condition stemmed from a design, production, or maintenance issue. However; the enclosure lists estimates indicating that the overwhelming majority of these 30 rulemaking actions were necessitated by design factors, and that for the remaining actions, production factors far outweighed maintenance and overhaul factors.

Although difficult in the short term, we recommend that the effort be expended at this point in time to identify the design features of complex components that qualify as Critical Design Configuration Control Limitation (CDCCL) items, and that FAA apply the requirements that accompany a CDCCL only to the parts associated with the identified design features. The policy should not encourage manufacturers to propose repairable components as CDCCLs. In the event a component must be designated as a CDCCL the applicable CMM should be updated to reflect the latest information. For example:

a. Update the consumables list to reflect those currently available on the market.

b. Revise the IPC portion of the manual to identify the current AD build standard.

c. Implement all OEM repairs into the manual.

d. Correct typographical errors in the existing component manual.

Recommendation: Designation of CDCCLs should be accomplished at the part level to the greatest extent possible, to include part number "rollovers", and CDCCLs should be identified in the IPC, AMM, and CMM. An industry-wide standard should be established for documenting CDCCLs (ie, separate section or list in the IPC, AMM, and CMM; highlighted text within IPC, AMM, and CMM; etc.). In such documents, the term CDCCL should be replaced by a new, standard term that clearly signals the item's significance to safety and regulatory compliance. It should be made clear that the text regarding CDCCLs published in an "accepted" document (eg, IPC, AMM, and CMM) in compliance with the specific requirements of an AD, would be FAA-approved data. Consideration should also be given to designating and identifying any CDCCL that may have the designation removed after the

tank in which it is installed is modified to provide a "low level" of flammability according to criteria used in the safety assessments of SFAR 88.

28. Pages 10 and 11 of 34, Section 5.B, "LIMITATIONS:" discussion. Recommend replacing the "LIMITATIONS:" discussion with the following revised text:

"LIMITATIONS:

1. The features of the parts identified in this list must be maintained in a configuration identical to the approved type design for the airplane, ***or an equivalent configuration approved by FAA***.

2. Any repairs to the parts identified in this list must be in accordance with the design approval holder's maintenance manual or other repair specifications approved by ***the Administrator*** specifically for that part. ***A part installed as an alternate to a CDCCL part must be in compliance with the CMM, or manufactured or repaired in accordance with FAA-approved data.***

3. Any alteration to the features of the parts identified in this list are considered major alterations and require approval by an FAA Aircraft Certification Office. [No change.]

4. In cases where a component is designated as a CDCCL, any test equipment or tooling utilized to repair or overhaul the component must be either in accordance with the CMM or otherwise comply with Part 43.13(a), and documented to be equivalent."

Justification: The suggested text provides needed flexibility. Justification by each limitation is provided as follows:

a. Limitation 1: Clearly, pump design and configuration are critical. However, experience has demonstrated that a requirement to comply with the CMM alone does not necessarily ensure a quality product. Quality escapes can and do occur. To repeatedly deliver an airworthy repaired or overhauled critical component a multiple pronged approach would be more effective. One prong would require close oversight of all repair stations that repair and overhaul such critical components, including manufacturers. The objective of the oversight would be to ensure that quality procedures were in place, and followed to achieve continuous quality in components delivered by those stations. These would include manufacturers, operators that repair and overhaul components, and other authorized repair stations. A second prong would be for the FAA to periodically meet at FAA headquarters with representatives of stations that repair critical components to discuss any recent known quality escapes, or system failures, and emphasize the need for continuous quality. The understanding would be that quality escapes in critical components could result in a loss of their repair station authorization for those components.

b. Limitation 2: The suggested wording would specify FAA approval of all parts and procedures used in the repair or overhaul of critical parts. Frequently, parts are not available through the manufacturer or have excessive lead times. Therefore, repair stations require the use of alternate parts suppliers, which normally has been facilitated through the authorization of FAA-approved PMA parts. PMA parts are not listed in the manufacturer manual so repair stations would not, under the proposed policy, be permitted to make substitutions. Repair stations must have this alternative. Although the ACO approves PMA applications, for the long term, the term "Administrator" would provide more flexibility, and should be allowed since the ACO represents the Administrator in the approval of parts.

c. Limitation 3: No change to the limitation is suggested. However, the limitation would become problematic unless the policy defines "parts" and "components" for purposes of intelligently designating CDCCLs, as recommended in the "General Comments". For example, if a component was unnecessarily designated as a CDCCL, it would be considered a "part" under limitation 3., and truly minor deviations from the CMM (eg, any fastener substitution) would be require processing as a major alteration or repair.

d. Limitation 4: Historically, repair stations have designed and developed test equipment based on manufacturer-supplied drawings. This test equipment must be shown to be equivalent to that utilized by the manufacturer, and to comply with Part 43.13(a). Often, the manufacturer does not make its test equipment available for purchase by other repair stations, and the manufacturer's manual will simply specify use of its equipment, "or equivalent". Without the suggested addition of limitation 4, the policy may be construed to require that repair stations procure the manufacturer's test equipment which might be infeasible.

29. Page 11 of 34, Section 5.B., Example 3. Revise terminology in the example as follows:

> **"Example 3.** A specific feature of the fuel tank system creates an unsafe condition in the event of certain failures. Assume that a fuel pump is repaired or overhauled, but certain safety features within the pump are not installed or are not overhauled in accordance with the Component Maintenance Manual (CMM). The CDCCL would require that certain safety features of the fuel pump be properly maintained in accordance with the CMM or other acceptable procedures approved by ***the Administrator***."

Justification: Clarity. As with item 28.b., above, the term "Administrator" would provide more flexibility, and should be allowed since the ACO represents the Administrator in the approval engineering data. The term "FAA engineering" is not standard with the terminology used in most guidance documents.

30. Page 12 of 34, paragraph 5.C.3. Revise the paragraph to read as follows:

"3. For CDCCLs like those in Example 3, the design approval holder should identify the appropriate Component Maintenance Manual. In addition, the design approval holder should insert a statement into both the Component Maintenance Manual and the Airplane Maintenance Manual that the component is classified as a ***Critical Design Configuration***

Control Limitation (CDCCL) and, therefore, that it may be repaired or overhauled only in accordance with the Component Maintenance Manual or other acceptable maintenance procedures ***and with parts*** approved by FAA ***Administrator***."

Justification: Spell out CDCCL for emphasis. As with item 28.b. above, the term "Administrator" would provide more flexibility, and should be allowed since the ACO represents the Administrator in the approval of parts. The term "FAA engineering" is not standard with the terminology used in most guidance documents.

31. Page 12 of 34, Section 5.C., last paragraph: Revise the last sentence of the paragraph to read as follows:

"The Airworthiness Directive will require documentation, ***per existing AD recording procedures,*** that the CDCCL are implemented in the operators' maintenance program."

Justification: Clarity. If FAA intends operator documentation other than that currently accomplishes under existing AD recording requirements, the paragraph should be revised to delineate the type, form, and format of the documentation.

32. Page 13 of 34, Section 6.B, second paragraph: (Identification and Awareness of CDCCLs) The first sentence of the paragraph should be changed to read as follows:

"Based on the answers to these questions, the design approval holders will identify the design feature as a Maintenance Significant Items for the fuel tank ***or any adjacent affected*** system."

Justification: Clarity.

33. Page 14 of 34, Section 6.C., last paragraph: The following sentence should be added to the last sentence of the paragraph:

"Maintenance programs revised in accordance with instructions issued by either the AD or the 'MSG-3' process described herein are, upon approval by the principle inspector, considered to have met the requirement of any applicable operating rule of SFAR 88 for approval by the ACO or Transport Airplane Directorate."

Justification: Consistency and re-enforcement. Clarification should be provided to show that changes to the Scheduled Maintenance Requirements (maintenance programs) resulting from either of the policy's processes should be reviewed and approved by the operator's principal inspector. This is consistent with paragraph 3.C. on page 7, (Requirements of SFAR 88), and also applies to Appendix A, page 21, process step 2.3.1.

34. Page 15 of 34, Section 6.D., last paragraph: Revise the last sentence of the paragraph to read:

"If the processes described above are properly applied, the resulting maintenance tasks and intervals should be fully effective to address hidden functional failure safety effects, as required by SFAR 88, and would be ***approved by the cognizant PMI***."

Justification: Consistency and thoroughness. As written, the sentence can be misinterpreted to require that the operator's maintenance program be approved by the ACO. The policy should clearly convey that the maintenance tasks and intervals developed by the design approval holders will be approved by the ACO, and that implementation of those maintenance instructions into the operator's maintenance program will be reviewed and approved by the cognizant PMI. The policy also should address future changes that may affect MSIs.

35. Page 15 of 34, Section 7, (Training Considerations), last paragraph states: "Operators may prevent adverse effects associated with wiring changes by standardized maintenance practices through training rather than by periodic inspection. Training is needed to end indiscriminant routing and splicing of wire and to provide comprehensive knowledge of critical design features of fuel tank systems that would be controlled by a Critical Design Configuration Control Limitation."

    Comment: In order for the operators to comply with the standardizing maintenance practices, the approval holders and the industry should create specific terminology and identification for the CDCCL-affected items, and harmonize the actions required for similar components in other fleets. This comment also applies to the recommendation in item 29, above.

36. Appendix A, page 22, process 2.4, (Standard Practices), the third sentence should be changed to read: "The TC or STC holder will need to ensure that the appropriate Instructions for Continued Airworthiness are revised as necessary ***and sent to the affected operators***."

37. Appendix B, Policy Memorandum 2003-112-15, Policy Memorandum 2003-112-15, page 23, paragraph (Summary/Background), the first sentence of the second paragraph should be changed to read: "SFAR 88 is the ***regulation*** for determining what design and/or maintenance improvements would be required to bring each existing transport category airplane into compliance with 14 CFR 25.981 (a) and (b) (Amendment 25-102) and 25.901."

38. Appendix B, Policy Memorandum 2003-112-15, page 24, paragraph (Summary/Background), the first sentence of the first paragraph should be changed to read: "Recently several applicants have requested to use the equivalent safety provision of the Spot amendment and have proposed use of ***flammability reduction methods***, or ***features*** in combination with certain design changes and maintenance actions to address ignition sources ***and the SFAR 88 requirements***."

39. Appendix B, Policy Memorandum 2003-112-15, page 24, paragraph (Definitions), the paragraphs a) and b) should reference Advisory Circular AC 25-19 (Certification Maintenance Requirements).

40. Appendix B, Policy Memorandum 2003-112-15, page 24, paragraph (Definitions), the probability definition of "impossible" should be added to this section.

41. Appendix B, Policy Memorandum 2003-112-15, page 25, paragraph (Definitions), paragraph f). The statement "conservative maintenance provisions" should be changed to ***"maintenance provisions"***.

42. Appendix B, Policy Memorandum 2003-112-15, page 25, paragraph (Definitions), paragraph j), states: "The FAA approved model is available on FAA web site: http://qps.airweb.faa.gov/sfar88flamex".

    Comment: In order to show compliance with the quality assurance requirements (QA) of FAR Part 21, an FAA order should be provided to formalize the approved "FAA Monte-Carlo Method", and to give instructions on its use. Also, a QA standard should be established to ensure the validity of the results in accordance with ***AC 21-33*** and ***AC 21-36***.

43. Appendix B, Policy Memorandum 2003-112-15, page 25, paragraph (Four-Element Unsafe Condition Evaluation Criteria), Element 3, the title " Unacceptable Service Experience – All Tanks", should be changed to "Service Experience – All Tanks" because all service experiences are acceptable and valid .

44. Appendix B, Policy Memorandum 2003-112-15, page 27, paragraph (Policy), second paragraph, the statement "Experience Engineering Judgment" should be changed to ***"Engineering Judgment"***.

Part 39 Rulemaking, 1994 to Present
Fuel Pumps of Selected Large Transports

June 25, 2004

Rulemaking	Summary	Estimate of Necessitating Factors (Known (K), Possible (P))		
AD Nos.		**Design**	**Prod.**	**Maint.**
AD 94-11-05	B767: Repetitive inspections of override/ jettison pumps	P		
AD 96-26-06	B747: Inspect condition of wiring and sleeving of fuel tank boost and auxiliary jettison pumps	P	P	P
AD 97-03-17	B747, B757: Repetitive inspections & resistance checks of CWT fuel boost and override/jettison pumps (corrosion a factor)	K	P	P
AD 97-19-15	B767: Procedures to preclude dry-running of center tank fuel pumps.	K		
AD 97-26-07	B747: Inspect for condition of wiring and sleeving of fuel tank boost and aux. jettison pumps	P	P	
AD 98-08-09	Immediate rule: L-1011: Procedures to preclude dry-running of fuel boost pumps.	K	P	
AD 98-16-19	B747: Repetitive inspections of inlet check valves and adapters of override/jettison pumps.	K	P	
AD 98-25-52	B747: Preclude dry operation of CWT override/ jettison pump; prohibit operation of horizontal stabilizer tank pumps. (Improper thrust bearings)	P	P	P
AD 99-24-06	B727; B737: Fuel Tank Boost Pump Breather Plugs.	P	P	P
AD 99-24-12	L-1011: Modification of fuel boost pumps. (Terminates AD 98-08-09.)	K	P	
AD 99-27-07	A300-600: Repetitive inspections of center tank fuel pumps and canisters for fatigue damage	K	P	
AD 2000-04-02	B737 Classics: Repetitive testing, and modification, of fuel boost pumps.	P	P	
AD 2000-11-06	B767: Inspect condition of wiring and sleeving of fuel tank boost and override/jettison pumps	P	P	P
AD 2000-22-21	Immediate rule : DC-10, MD-10 and MD-11: Procedures to address faulty fuel pump connectors	P	P	
AD 2000-24-08	A320 Series : Inspect and modify wiring of wing fuel boost pumps	P	P	
AD 2001-08-24	Immediate rule – B737: Procedures to preclude dry-running of B737 CWT fuel pumps.	P	P	
AD 2001-12-21	B747: Correct thrust washer in CWT override/jettison pumps; and horizontal stabilizer tank pumps. (Terminates AD 98-25-52.)	P	P	P
AD 2001-15-08	B767: Retrofit new-design center tank pumps; standardize override/jettison pump diffusers & inspect periodically (HCF) (Supercedes AD 97-19-15)	K	P	P
AD 2001-21-07	B747: Rework CWT override/jettison fuel pump housing, install new design impeller motor assembly (Supercedes AD 98-16-19.)	K		
AD 2002-18-52	Emergency AD : B737NG, B747, B757: Preclude dry operation of CWT pumps; prohibit operation of horizontal stabilizer tank pumps. (Misrouted wires)		K	P
AD 2002-19-52	Immediate rule: B737NG, B747, B757: Adds X-ray inspection of fuel pumps to relieve minimum fuel levels. (Supercedes AD 2002-18-52)			
AD 2002-24-51	Emergency AD : B737NG, B747, B757: Reinstates minimum fuel levels for pump operations. (Extreme overheating found on 3,500- & 6,000-hr. pumps)	P	P	P
AD 2002-24-52	Emergency AD : B747-400: Correction to AD 2002-24-51.			
AD 2003-08-14	Immediate rule : DC-10, MD-10 and MD-11: Preclude dry operation of certain fuel boost/transfer pumps until replaced with pumps of a certain lot.		K	
AD 2003-16-10	Immediate rule : DC-10, MD10: Replace certain fuel boost/transfer pumps with pumps of a certain lot.		K	
AD 2004-08-03	A300-600: Inspection of center tank fuel pump diffusers: Repetitive inspections of pump housings and canisters.	K	P	
AD 2004-11-11	B737NG: Install spacers for aft fuel boost pump wire bundles.	P	P	P
AD 2003-07-14	DC10 (1): Repetitive tests of fuel boost/transfer pump electrical connectors.	P	P	
Docket Nos.	**Pending NPRMs**			
2002-NM-97-AD	A300-600: Modification of center tank fuel pump canisters. (Would terminate AD 99-27-07.)	K	P	
2002-NM-305-AD	NPRM : B777: Install new-design socket contacts for four, external main fuel boost pumps.	K		
	Totals:	**Design**	**Prod.**	**Maint.**
	Known	**11**	**3**	**0**
	Possible	**14**	**21**	**10**

Enclosure 2